

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A networked system, comprising:
 - a set of Web services, each representing a member selected from a group consisting of a human service provider and a piece of software; and
 - a collaboration framework for allowing the set of Web services to work jointly together to solve an engineering problem, the collaboration framework including a universal description discovery and integration framework that has information pertaining to verification, validation, and accreditation of each Web service in the set of Web services.
2. The networked system of Claim 1, wherein the set of Web services includes a Web service that represents government laboratories.
3. The networked system of Claim 1, wherein the set of Web services includes a Web service that represents academic institutions.
4. The networked system of Claim 1, wherein the set of Web services includes a Web service that represents military departments.
5. The networked system of Claim 1, wherein the set of Web services includes a Web service that represents businesses.
6. A system for allowing Web services to collaborate, comprising:
 - a set of Web services, each Web service being selected from a group consisting of a first service representing a piece of software that provides engineering analysis, a second service representing a human that provides engineering analysis, and a composed service; and
 - a service registry for allowing the set of Web services to be registered, the service registry being capable of allowing the registered Web services to be discovered.
7. The system of Claim 6, further comprising a set of functional agents for coordinating Web services within an engineering discipline and a set of community agents for coordinating functional agents across engineering disciplines.

8. The system of Claim 6, further comprising a project data manager for creating a project database, the project data manager being capable of returning values generated by Web services in the course of engineering analysis.

9. The system of Claim 6, further comprising a workflow manager for capturing decisions, knowledge, and experiences of Web services as a workflow for a particular project.

10. The system of Claim 6, further comprising a messaging manager for allowing services to be wrapped in a customizable, tag-based protocol for connecting into the system so as to collaborate with the set of Web services.

11. In a computing system, a set of collaborative software agents, comprising:
a set of functional agents for coordinating Web services within an engineering discipline; and

a set of community agents for coordinating functional agents across engineering disciplines, the set of community agents including an arrangement configuration design and analysis community agent, the set of community agents further including a requirements definition and management community agent.

12. The system of Claim 11, the set of community agents further comprising a multi-disciplinary analysis and optimization community agent.

13. The system of Claim 11, the set of community agents further comprising a distributed computing community agent.

14. The system of Claim 11, the set of community agents further comprising a workflow management community agent.

15. The system of Claim 11, the set of community agents further comprising an application and model integration community agent.

16. A computer-implemented method for executing a collaboration framework, comprising:

registering Web services by the service provider with the collaboration framework;

issuing solution requirements by a project sponsor Web service;

forming of a project team by a chief engineer Web service; and

capturing a workflow as the project team designs a solution to satisfy the solution requirements.

17. The computer-implemented method of Claim 16, wherein forming the project team includes selecting desired Web services by the chief engineer Web service.

18. The computer-implemented method of Claim 17, further comprising discovering a reusable workflow based on the selected Web services by the chief engineer Web service.

19. The computer-implemented method of Claim 18, further comprising sending design values to the selected Web services for analysis of a solution.

20. The computer-implemented method of Claim 19, wherein the act of sending design values includes sending design values by e-mail if a selected Web service represents a human service provider who provides the analysis.